CONSULTING
STAFFING
SUPPORT

PYRAMID ENERGY SERVICES

simplifying

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What we can do for you

Routine Maintenance / Troubleshooting but Limited to Just that

Safety is our top priority

Environmental Health and Safety (EHS) is the responsibility of every employee at Pyramid Energy Services, and our long-ranging strategy is built around the widely recognized principles of the U.S. Occupational Safety & Health Administration (OSHA) Voluntary Protection Program. Pyramid Energy Services has developed an 18-point EHS framework, including more than 540 evaluation questions for our technicians as they undergo numerous hours of training and certification prior to being deployed at a job site. Our technicians undergo 80 hours of rigorous EHS training on an annual basis. Pyramid Energy Services is compliant with the ISO 14001 and OSHAS 18001 registries, and is also PICS- and IS Net world-certified.

Looking to Reduce Your Unscheduled Wind Turbine Maintenance Budget?

A Significant Portion of O&M Costs Reside in Unscheduled Maintenance Events to Address Major Component Issues, Highly Experienced in Sophisticated Kilowatt and Megawatt-Class Turbines, Pyramid Energy Services, Services Engineers and Technicians Partner with Our Customers to Provide:

• Timely Response to Most Common Wind Turbine Problems
• Turbine Specific Engineered Tooling Which Offers Cost-Effective Alternatives to OEMs
• Innovative Processes and Strong Quality Assurance Protocols

Large Correctives Turbine Engineering and Procedures

• PLC Programming
• Torque and Tension
• Cleaning
• Oil Changes
• Brake Pads
• Electrical Retrofit, Mechanical Retrofits

Wind Generator Service

• Borescope inspection service
• Ceramic hybrid bearing upgrades
• Speed encoder replacement
• Upgraded slip ring assemblies
• Electrical testing, thermography analysis
• Slip ring replacement to include grounding ring power and ground brushes
• Water and forced air cooling system repairs
• Generator laser alignment services
• Up tower generator bearing inspection and replacement service
• Replacement parts including brush holders, brushes, spring clips, springs and connectors

Pyramid Energy Services Provides a Total End to End Solution.

Construction and Labor Support

Pyramid Energy Services has aided in the installation of over 2,000 MW of wind turbines across the U.S. from offloading, rotor building, stacking out, to full mechanical completion and commissioning. Our project managers and technicians work directly with engineering, procurement and construction (EPC) project managers and leads to ensure delivery and crane schedules stay on time or ahead of time. Many of our senior technicians have 10 years of experience erecting turbines and troubleshooting. Pyramid Energy Services has provided technicians and management for construction projects at more.

Our support includes:

• Offload• Nacelle prep• Rotor build
• Grouting• Stack out• Tower torque• Bottom finish•
Power washing crews• Full mechanical completion per OEM requirements• Blade repair• Cabling and termination• Commissioning• Inventory management of tools and materials

Join us in our commitment to evolving engineered solutions that reduce unscheduled maintenance downtime, quickly and reliably. A pipeline of new capabilities and engineered solutions are always in development – call Pyramid Energy Services.

Check us out on the web

PyramidEnergyServices.com
READY FOR YOUR END-OF-WARRANTY WIND TURBINE INSPECTION?

AS A LEADING INDEPENDENT SERVICES PROVIDER TO THE U.S. WIND INDUSTRY, PYRAMID ENERGY SERVICES HAS CONDUCTED NUMEROUS END-OF-WARRANTY AND POST-WARRANTY INSPECTIONS ACROSS A WIDE VARIETY OF OEM TURBINE PLATFORMS (MW & KW). ACCORDING TO AWEA, 6.4 GWs OF U.S. WIND TURBINE POWER ARE DUE TO COME OFF WARRANTY IN 2013.

WITHOUT THE IN-DEPTH KNOWLEDGE OF EACH TURBINE’S POTENTIAL RISK PROFILE:
- PROFITABILITY MAY BE AT RISK • MAINTENANCE COSTS MAY BECOME UNPREDICTABLE

MAINTAIN PROFITABILITY

OUR COMPREHENSIVE AND CUSTOMIZABLE MULT-POINT INSPECTION ENSURES A THOROUGH REVIEW OF MAJOR SYSTEMS INCLUDING:
• BLADES (IN-AIR AND GROUND)
• SURFACE DAMAGE
• LEADING EDGE EROSION
• BONDING FATIGUE
• LIGHTNING ARRESTER CONTINUITY
• DRAIN PORT CLEANING
• VISUAL INTERNAL CHECKS
• ELECTRICAL
• GEARBOX
• BORESCOPE (PLANETARY & HILICAL)
• MAGNETIC SWEEP
• GENERATOR INCLUDING TOWER CABLING
• BLADE BEARINGS / PITCH COMPONENTS
• YAW GEAR / MOTOR
• PAD MOUNT TRANSFORMER
• FOUNDATION
• HYDRAULICS
• INFRARED THERMOGRAPHY ANALYSIS
• OIL AND GREASE SAMPLING & ANALYSIS
• TORQUE VERIFICATION (PING TESTING)
• VIBRATION ANALYSIS
• GENERAL WALK-DOWN: CONDITION, FUNCTION AND CLEANLINESS
WIND TURBINE GEARBOX OIL CHANGE SERVICE IN THE FIELD ANYTIME

The gearbox needs to be monitored and serviced to ensure the turbine functions properly and effectively. A healthy gearbox with proper oil changes can enhance a turbine’s profitability and extend its life.

A wind turbine’s gearbox is at its heart. Pyramid Energy Services keeps your gearboxes healthy and efficient by performing gearbox oil changes in the field using state-of-the-art self-contained trucks and trailers. Pyramid Energy Services oil change equipment, methods and expertise make all the difference to you by maximizing time, cost and cleanliness.

State-of-the-Art Equipment

Pyramid Energy Services Services boasts unique, self-contained oil change trucks that are optimized to better serve you and the wind turbine gearbox. Pyramid Energy Services has also introduced an oil change trailer, featuring all the same qualities as the trucks and well suited for smaller projects.

Features and Benefits Include:

- Self-contained mobile oil replacement system capable to change oil nation-wide, in most climate conditions
- Units feature on-board diesel generators, customized tooling, and fixtures eliminating the need for additional electricity or resources from your site to complete oil changes
- Pressurized oil system boasts Pyramid Energy Services exclusive advanced motor ratios, proven to enhance efficiency and reliability
- Single 300-foot hose reel holds three individual hoses (waste oil, flush oil, new oil), sleeved together to prevent leaks, enhance safety and minimize time spent winding and unwinding hoses
- Four segregated oil reservoirs ensure minimum downtime and low risk of contamination:
  - Portable HYDAC particle container guarantees cleanliness immediately on site
  - Temperature control tanks optimize flow in any climate
  - Integrated PLC controller that uploads customized oil change procedures to ensure repeatability & accuracy
  - On-board and metering capabilities to ensure accuracy of oil fill and control costs
- Waste oil
- Flush oil (with heating and filtration)
- Rinse oil (with heating and filtration)
- New oil (with heating and filtration)
- On-board filtration system guarantees clean oil that meets or exceeds ISO 4406 standard
- Portable HYDAC particle container validates cleanness immediately on site
- Temperature control tanks optimize flow in any climate
- Integrated PLC controller that uploads customized oil change procedures to ensure repeatability & accuracy
- On-board and metering capabilities to ensure accuracy of oil fill and control costs

COMPREHENSIVE WIND TURBINE BLADE INSPECTION, REPAIR AND REMEDIATION

While wind turbine blades see millions of turns over their lifetime, degradation due to lighting, stress fractures and fatigue is unavoidable. Like any motor, wind turbine blades require scheduled maintenance to perform at their optimal levels. Improve capacity factors with the proper blade maintenance—especially on the leading edge. Blade performance impacts your bottom line. Having installed and repaired more than 9,000 blades across the U.S., Pyramid Energy Services expertise can help to maximize your investments.

Maintenance and repair programs

- Structural composite repairs
- Leading edge protection/preventive maintenance
- Repair/replace lightning protection receptors and systems
- Rotorcraft Comprehensive Analysis (RCA) reviews
- Third party representation during manufacturing and construction
- In-house refurbishment

When you select Pyramid Energy Services for blade services, you will leverage the expertise of our highly experienced technicians. A yearly visual inspection of blades will be conducted from the ground. Detailed inspections can be undertaken from our rapidly deployable Platform lift system, which reduces the need and expense of deploying large cranes at your site. Our system offers complete blade root-to-tip access and improves technician safety. Pyramid Energy Services Services is your go-to partner for comprehensive wind turbine blade services.